UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/903,081	07/10/2001	Richard E. Demaray	M-11522 US	1225

7590 09/10/2004

FINNEGAN HENDERSON FARABOW
GARETT & DUNNER LLP
1300 I STREET N.W.
WASHINGTON, DC 20005-3315

EXAMINER	
HOFFMANN, JOHN M	

ART UNIT	PAPER NUMBER
1731	

DATE MAILED: 09/10/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)
	09/903,081	DEMARAY ET AL.
	Examiner	Art Unit
	John Hoffmann	1731

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 August 2004*.

2a)☒ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *14-20,24-27 and 29* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *14-20,24-26 and 29* is/are rejected.

7)☒ Claim(s) *27* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Information Disclosure Statement

Not all of the references on the 1449-forms have been considered. It is indicated on the 1449s as to why those individual references were not considered.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 14-17 and 24-27 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

There is no antecedent basis for "the core layer deposition" (the last two lines of claim 14). More importantly it is unclear what is meant by such. From the 8/10/04 arguments it seems that Applicant intends the "core layer deposition" to structure – i.e. the deposited layer. However, when turning to the specification (e.g. [0012] and [0033]) the "core layer deposition" is clearly a process – not structure. It is not permitted to change/add a definition after the filing of the application. For these reasons the claims are indefinite.

Claim Objections

Claim 27 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 14 requires forming a ridge structure in a layer in the first material having a refractive index. Claim 27 does not form a ridge structure in the first material (i.e. the glass) - rather it forms the structure in a different material (silicon) which is then converted into the first material. Claim 27 is outside the scope of claim 14. It does not further limit claim 14, but rather it takes it to a completely exclusive scope.

Claim 27 is not further treated on its merits.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
>
> (e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 14 is rejected under 35 U.S.C. 102(e) as being anticipated by Kawaguchi 6605228.

Figures 7a-7e and col. 5, line 63- col 6, 28 discloses the invention: 12a points to the ridge structure. Figure 7B represents the depositing of the core layer. Fig 7e shows the depositing of the upper cladding layer. Col. 6, lines 3-8, 21-23 disclose the refractive indices. Col. 6, lines 17-18 discloses using polishing rather than etching to remove some material: this polishing is deemed to be the exclusion of etching.

As to the newly added limitation that "the planar optical device is formed with the core layer deposition on the ridge portion of the ridge structure": The Kawaguchi is clearly made by "deposition on the ridge portion of the ridge structure". The deposition is of the core layer. In as much as Applicant's layer 20 is a core layer (see applicant's paragraph [0023]) of the specification, Kawaguchi's 14 is a core layer.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 15-17, 24-26, 29 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawaguchi as applied to claim 14 above, and further in view of Klein 3850604.

Kawaguchi discloses using sputtering for forming the core (col. 4, line 20) but not any of the specifics. One of ordinary skill knows all of the specifics. Klein is cited as being evidence as to what one of ordinary skill thinks of when one is to sputter glass. Col. 4, lines 3-15 of Klein discloses the typical sputtering operation. Alternatively, it would have been obvious to use the Klein apparatus/method because it is "typical" and one would expect a typical way to be more reliable, accessible, universally usable and robust than any atypical method/apparatus.

As to the uniform plasma condition, see col. 4, lines 30-38 of Klein.

Claim 24: see Kawaguchi, col. 4, lines 12-21 and col 6, lines 21-27. It would have been obvious to use the same sort of deposition technique/apparatus for the top layer because it would require extra equipment to do it by another means.

Claims 16, 29 and 25: See col. 4: line 16-18 of Klein which discloses that ions impacting the target creates heat. Heat is a form of power. The power is generated from the application of RF. In other words it is power that was converted from an RF source. The claims do not require that the power be electrical or anything else. Alternatively since both are anodes are connected to the ground, the RF power is applied to both. The claims do not differentiate between the two powers.

Claim 26: Since Kawaguchi does the same thing applicant does, one would expect the same surface roughness.

Claim 29 as to not having a separate step: in Kawaguchi the etching is an integral step of the forming an intermediate structure – it is not a separate step.

Claims 18-20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kawaguchi in view of Klein 3850604 and Kestigian 4915810.

See how Kawaguchi and Klein were previously applied.

Kestigan disclose making targets of two compositions so as control the deposition composition and to avoid the "expensive and time-consuming empirical procedure". It would have been obvious to use a Kestigan type target in the Kewaguchi/Klein method so that one can readily control the composition as taught by Kestigan.

Present claim 18 also requires the central region and outer regions. These regions are not limited in the claims. They can each comprise more than one materials. One can envision various such regions in Kestigan Figure 2. For example each big circle is an outer region and the circle of R1 or R2 is the central region. Alternatively radius R1 circumscribes the inner region. And region between R2 and R1 is an outer region and the region between R2 and R3 is a second outer region. Each of the regions comprises both materials: the claims are open to including additional materials in all regions.

Claims 19-20 are clearly met.

Response to Arguments

It is argued that Claim 27 is within the scope of Claim 14. Examiner is unclear if he understands the argument. It does not point out how one can make the ridge structure in the first material as required by claim 14 – by actually making the ridge structure in the silicon as required by claim 27. It is argued that in claim 27 "the first material includes a silicon wafer with a layer of silica". This is inaccurate because a material is exactly one material – it cannot be two. Second, it is only the final product which has the silica and silicon – the ridges are formed before the silica exists.

It is also argued that in Kawaguchi that the core layer deposited on the ridge portion is completely removed. This is not completely accurate: only ***the portion*** of the layer which is deposited on the ridge portion is completely removed – other portions of the core layer (which was deposited on the ridge as well as the planar portion) still remain. More importantly, the present claims do not preclude the removal of the core layer. The broadest reasonable interpretation of the newly added "wherein the planar optical device is formed with the core layer deposition on the ridge portion of the ridge structure" is deemed to be essentially: *wherein the planar optical device formation process comprises core layer deposition on the ridge portion of the ridge structure.* Applicant's (assumed) position is that the new language is limited to*: wherein the optical device comprises a deposited core layer on the ridge portion.* Whereas this may be a reasonable interpretation, such is not the **broadest** reasonable interpretation. See also the rejections (112 and 102) above which also discuss this limitation.

As to claims 18-20 being indicated as being allowable: in view of the new Information Disclosure Statement, the indication of allowable subject matter is no longer maintained.

Conclusion

Applicant's submission of an information disclosure statement under 37 CFR 1.97(c) with the fee set forth in 37 CFR 1.17(p) on 10 August 2004 prompted the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 609(B)(2)(i). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Hoffmann whose telephone number is (571) 272 1191. The examiner can normally be reached on Monday through Friday, 7:00- 3:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Griffin can be reached on 571-272-1189. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

John Hoffmann
Primary Examiner
Art Unit 1731

9-8-04

jmh